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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,974	01/29/2004	Yasuhiro Nonaka	P24876	2945
7055	7590	07/25/2005	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			WALSH, RYAND	
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/765,974

Applicant(s)

NONAKA ET AL.

Examiner

Ryan D. Walsh

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 29 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: The described arrow B (Pg. 14, Ln. 24) is not shown in Fig. 2, as described on (Pg. 14, Ln. 17). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: The temperature detecting means (Pg. 3, Ln. 8) lacks a reference number. The underlined text is further described as a "thermostat (210) " (Pg. 3, Ln. 18). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures

appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Figure 26 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to because Figure 25 is not described in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered

and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 2 is objected to because of the following informalities:

Page 69, line 21 – "...the exciting coil to the inverter power circuit and two..." The underlined text lacks proper antecedent basis for this limitation in the claim.

Claim 3 and 4 are also objected to for the same informality. The use of "inverter power circuit" lacks proper antecedent basis for this limitation in claims 3 and 4.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

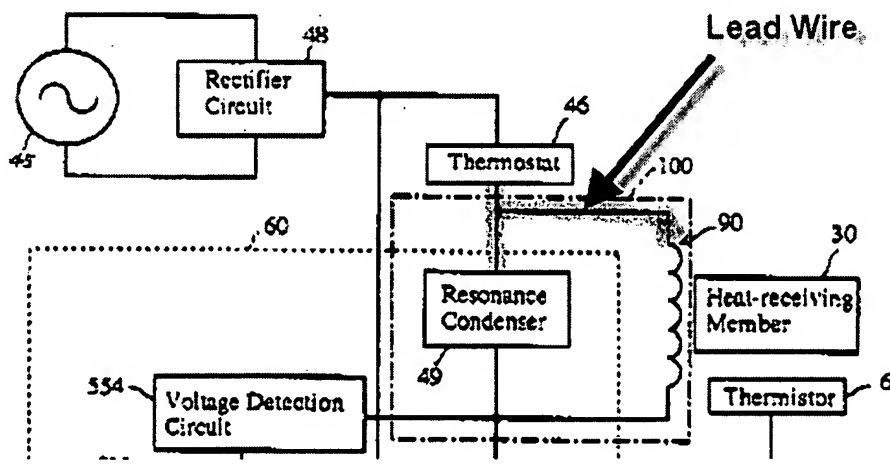
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 and 5-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Okabayashi (US Pat. # 5,794,096).

Regarding claim 1, Okabayashi teaches,

"A heat generating apparatus comprising: a heat generating member (Fig. 36, ref.# 30); an exciting coil (Fig. 36, ref.# 90) provided opposite (Col. 25, Ln. 4-5) to the heat generating member and serving to cause the heat generating member to generate heat by electromagnetic induction; a thermostat (Fig. 36, ref.# 46) provided in the vicinity of the heat generating member and serving to stop supply of a power to the exciting coil when a temperature abnormality of the heat generating member is detected; a power circuit (Fig. 36) having a rectifying circuit (Fig. 36, ref.# 48) and a smoothing circuit (Fig. 36, ref.# 49, note: a resonance circuit [Col. 23, Ln. 7-9] is equivalent to a smoothing circuit) and serving to control the supply of the power to the exciting coil; and a lead wire (see Fig. 36 below) connecting the exciting coil, the thermostat and the power circuit, wherein the thermostat is electrically connected between the rectifying circuit and the smoothing circuit."

FIGURE 36 (reference from Okabayashi)



Regarding claim 2, Okabayashi teaches,

"wherein the lead wire (Fig. 36, shown above) shares one of two wires connecting the exciting coil (Fig. 36, ref.# 90) to the inverter power circuit (Fig. 36, ref.# 60) and two wires connecting the thermostat (Fig. 36, ref.# 46) to the inverter power circuit (Fig. 36, ref.# 60)."

Regarding claim 5, Okabayashi teaches,

"A heat generating apparatus comprising: a heat generating member (Fig. 36, ref.# 30); an exciting coil (Fig. 36, ref.# 90) provided opposite (Col. 25, Ln. 4-5) to the heat generating member and serving to cause the heat generating member to generate heat by electromagnetic induction; a first power source (Fig. 36, ref.# 45) for supplying a power to the exciting coil; a switching unit (Fig. 36, ref.# 44 and Col. 8, Ln. 51-57) for switching ON/OFF of the supply of the power from the first power source to the exciting coil (Col. 22, Ln. 12-14); a second power source (Fig. 36, ref.# 53) for driving the switching unit (Col. 21, Ln. 17-18); and a thermostat (Fig. 36, ref.# 46) for stopping the supply of the power from the first power source to the exciting coil when the heat generating member exceeds a predetermined temperature."

Regarding claim 6, Okabayashi teaches,

"The heat generating apparatus as claimed in claim 5, further comprising, a switching unit voltage detecting circuit (Fig. 36, ref.# 554) which detects that a voltage to be applied to the switching unit exceeds a safe operating voltage range; and a control circuit (Fig. 36, ref.# 525) which controls a power to be supplied to the coil in response to a detection signal of the switching unit voltage detecting circuit."

Regarding claim 7, Okabayashi teaches,

“wherein when the switching unit voltage detecting circuit (Fig. 36, ref.# 554) detects that the safe operating voltage range of the switching unit is exceeded, the control circuit (Fig. 36, ref.# 525) limits the supply of the power to the exciting coil to carry out a control in such a manner that the voltage to be applied to the switching unit maintains a safe operating voltage range limitation (Col. 26,Ln. 31-41).”

Regarding claim 8, Okabayashi teaches,

“wherein when the switching unit voltage detecting circuit (Fig. 36, ref.# 554) detects that the safe operating voltage range of the switching unit is exceeded, the control circuit (Fig. 36, ref.# 525) detects the supply of the power to the exciting coil and makes the voltage to be applied to the switching unit attenuate on an optional level within a safe operating voltage range limitation(Col. 26,Ln. 31-41).”

Regarding claim 9, Okabayashi teaches,

“wherein when the switching unit voltage detecting circuit (Fig. 36, ref.# 554) detects that the safe operating voltage range of the switching unit is exceeded, the control circuit (Fig. 36, ref.# 525) stops the supply of the power to the exciting coil (Col. 26,Ln. 31-41).”

Regarding claim 10, Okabayashi teaches,

“An electromagnetic induction heating fixing apparatus (see title) for an image forming apparatus, comprising: a heat generating member (Fig. 36, ref.# 30); an exciting coil (Fig. 36, ref.# 90) provided opposite (Col. 25, Ln. 4-5) to the heat generating member and serving to cause the heat generating member to generate heat by electromagnetic induction; a thermostat (Fig. 36, ref.# 46) provided in the vicinity of

the heat generating member and serving to stop supply of a power to the exciting coil when a temperature abnormality of the heat generating member is detected; a power circuit (Fig. 36) having a rectifying circuit (Fig. 36, ref.# 48) and a smoothing circuit (Fig. 36, ref.# 49, note: a resonance circuit [Col. 23, Ln. 7-9] is equivalent to a smoothing circuit) and serving to control the supply of the power to the exciting coil; and a lead wire (see Fig. 36 above) connecting the exciting coil, the thermostat and the power circuit, wherein the thermostat is electrically connected between the rectifying circuit and the smoothing circuit."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okabayashi (US Pat. # 5,794,096) in view of Akutsu et al (US Pat. # 6,775,491).

Regarding claims 3 and 4 Okabayashi discloses "A heat generating apparatus comprising: a heat generating member (Fig. 36, ref.# 30); an exciting coil (Fig. 36, ref.# 90) provided opposite (Col. 25, Ln. 4-5) to the heat generating member and serving to cause the heat generating member to generate heat by electromagnetic induction; a thermostat (Fig. 36, ref.# 46) provided in the vicinity of the heat generating member and serving to stop supply of a power to the exciting coil when a temperature abnormality of the heat generating member is detected; a power circuit (Fig. 36) having a rectifying

circuit (Fig. 36, ref.# 48) and a smoothing circuit (Fig. 36, ref.# 49, note: a resonance circuit [Col. 23, Ln. 7-9] is equivalent to a smoothing circuit) and serving to control the supply of the power to the exciting coil; and a lead wire (see Fig. 36 below) connecting the exciting coil, the thermostat and the power circuit, wherein the thermostat is electrically connected between the rectifying circuit and the smoothing circuit." In claim 3, Okabayashi does not teach "wherein the lead wire includes a connector containing at least four pins having two lead connecting the exciting coil to the inverter power circuit and one wire connecting the thermostat to the inverter power circuit, and changes a connecting position of the connector having one wire connecting the thermostat to the inverter power circuit depending on a supply voltage and prevents an erroneous connection of the exciting coil to the inverter circuit based on the supply voltage." Also, in claim 4 Okabayashi does not teach, "wherein the lead wire includes a connector containing two pins having two wires connecting the exciting coil to the inverter power circuit and a connector containing at least two pins having one wire connecting the thermostat to the inverter power circuit, and changes a connecting position of the connector having one wire connecting the thermostat to the inverter power circuit depending on a supply voltage and prevents an erroneous connection of the exciting coil to the inverter circuit based on the supply voltage."

However, the connector as explained above is routine in the art as evident to the teaching of Akutsu et al. (Fig. 1, ref.# 6 and 7). The connectors separate the source of power (Fig. 1, ref.# 12) from the thermostats (Fig. 1, ref. # 13 and 14), and also prevent an erroneous connection to the complete circuit. Thus, it would have been obvious to

one ordinary skilled in the art at the time of invention was made to modify Okabayashi in a matter described above for at least the purpose to obtain a safer circuit connection.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama (US Pat. # 6,697,580) in view of Okabayashi (US Pat. # 5,794,096).

Regarding claim 11, Nakayama discloses an "image forming apparatus (Col. 1, Ln. 1) comprising: photosensitive member (Fig. 1, ref.# 30); charger (Fig. 1, ref.# 36) which uniformly charges a surface the photosensitive member to have a predetermined electric potential; exposing unit (Fig. 1, ref.# 10) which irradiates scanning line of a light beam corresponding to image data on the charged photosensitive member, thereby forming electrostatic latent images; developer (Fig. 1, ref.# 34) which develops the electrostatic latent images formed on the photosensitive member; cleaner (Fig. 1, ref.# 42) which removes a toner remaining on the photosensitive member." Nakayama does not teach "an electromagnetic induction heating fixing apparatus, comprising: a heat generating member; an exciting coil provided opposite to the heat generating member and serving to cause the heat generating member to generate heat by electromagnetic induction; a thermostat provided in the vicinity of the heat generating member and serving to stop supply of a power to the exciting coil when a temperature abnormality of the heat generating member is detected; a power circuit having a rectifying circuit and a smoothing circuit and serving to control the supply of the power to the exciting coil; and a lead wire connecting the exciting coil, the thermostat and the power circuit, wherein the thermostat is electrically connected between the rectifying circuit and the smoothing circuit."

However, an electromagnetic induction heating fixing apparatus from above is routine in the art as taught by Okabayashi: "An electromagnetic induction heating fixing apparatus (see title) for an image forming apparatus, comprising: a heat generating member (Fig. 36, ref.# 30); an exciting coil (Fig. 36, ref.# 90) provided opposite (Col. 25, Ln. 4-5) to the heat generating member and serving to cause the heat generating member to generate heat by electromagnetic induction; a thermostat (Fig. 36, ref.# 46) provided in the vicinity of the heat generating member and serving to stop supply of a power to the exciting coil when a temperature abnormality of the heat generating member is detected; a power circuit (Fig. 36) having a rectifying circuit (Fig. 36, ref.# 48) and a smoothing circuit (Fig. 36, ref.# 49, note: a resonance circuit [Col. 23, Ln. 7-9] is equivalent to a smoothing circuit) and serving to control the supply of the power to the exciting coil; and a lead wire (see Fig. 36 above) connecting the exciting coil, the thermostat and the power circuit, wherein the thermostat is electrically connected between the rectifying circuit and the smoothing circuit." Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify Nakayama in the matter described above for at least the purpose of maintaining uniform heating output.

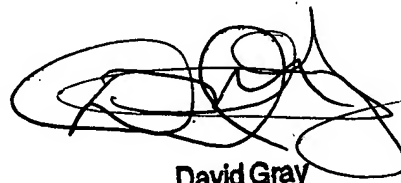
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan D. Walsh whose telephone number is 571-272-2627. The examiner can normally be reached on M-F 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on 571-272-2119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan D. Walsh
Patent Examiner
Art Unit 2852



David Gray
Primary Examiner